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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/533,469	06/02/2005	Noriaki Kimura	123650	9360

25944 7590 04/20/2007

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EXAMINER	
WYATT, KEVIN S	
ART UNIT	PAPER NUMBER
2878	

SHORTENED STATUTORY PERIOD OF RESPONSE	MAIL DATE	DELIVERY MODE
3 MONTHS	04/20/2007	PAPER

Please find below and/or attached an Office communication concerning this application or proceeding.

If NO period for reply is specified above, the maximum statutory period will apply and will expire 6 MONTHS from the mailing date of this communication.

Office Action Summary	Application No.	Applicant(s)	
	10/533,469	KIMURA ET AL.	
	Examiner	Art Unit	
	Kevin Wyatt	2878	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☒ Responsive to communication(s) filed on *23 January 2007*.

2a)☒ This action is **FINAL**. 2b)☐ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) *1-4* is/are pending in the application.

4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☒ Claim(s) *1-4* is/are rejected.

7)☐ Claim(s) _____ is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☐ The specification is objected to by the Examiner.

10)☒ The drawing(s) filed on *23 January 2007* is/are: a)☒ accepted or b)☐ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

12)☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a)☐ All b)☐ Some * c)☐ None of:

1.☐ Certified copies of the priority documents have been received.

2.☐ Certified copies of the priority documents have been received in Application No. _____.

3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1) ☒ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☒ Information Disclosure Statement(s) (PTO/SB/08) Paper No(s)/Mail Date *0405*.
4) ☐ Interview Summary (PTO-413) Paper No(s)/Mail Date. _____.
5) ☐ Notice of Informal Patent Application
6) ☐ Other: _____.

DETAILED ACTION

1. This Office Action is in response to the Amendment after non-final and remarks filed on 01/23/2007. Currently, claims 1-4 are pending.

Claim Rejections - 35 USC § 103

2. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

> (a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the manner in which the invention was made.

3. Claims 1-4, are rejected under 35 U.S.C. 103(a) as being unpatentable over Burlefinger (U.S. Patent No. 6,492,657 B1) in view of Satoh (U.S. Patent No. 6,671411 B1).

Regarding claim 1, Burlefinger shows in Figs. 1-3, a two-dimensional weak radiation detector, comprising: a photoelectric conversion part (304. i.e., photocathode) which emits electrons (310, i.e., photoelectrons) by incidence of photons (308); an amplification module (amplification portion of electron amplification and collection device (320)) which is placed to face the photoelectric conversion part (304. i.e., photocathode), and is provided with a number of electron amplification parts (26, i.e., secondary emission layer) that amplify the photoelectric conversion part (304. i.e., photocathode); a detection module (combination of depletion region (31) and semiconductor region (22)) which is provided to correspond to each of said electron amplification parts constituting the amplification module, and is provided with a number

of electron detection parts on which electrons from the electron amplification parts (26, i.e., secondary emission layer) are incident. Burlefinger does not disclose an operation control part which operates each of said electron detection parts constituting the detection module based on an orthogonal modulation pattern; and a light incidence position calculation part which obtains positions of said photons incident on said photoelectric conversion part, based on a control signal of the operation control part and an output signal of each of said electron detection parts. Satoh shows in Figs. 1-2 an operation control part (combination of cpu (117) operation unit (116)) which operates each of said electron detection parts constituting the detection module based on an orthogonal modulation pattern; and a light incidence position calculation part (combination of original image data area (101a), orthogonal transform coefficient area (101b) and orthogonal transform unit (102)) which obtains positions of said photons incident on said photoelectric conversion part (304. i.e., photocathode), based on a control signal of the operation control part (combination of cpu (117) operation unit (116)) and an output signal of each of said electron detection parts (the positions of the photons are inherently obtained by the orthogonal transformation unit (103) during first time encoding sequence in step s107 in Fig. 2, col. 6, lines 59-65 and col. 7, lines 1-14). It would have been obvious to one skilled in the art to provide the image coding apparatus of Satoh to the device of Burlefinger for the purpose of improving compression of image data prior to file storage.

Regarding claim 4, Burlefinger further discloses that an emission part (front surface of photocathode), which emits the photons by incidence of microwaves or

corpuscular rays, is provided at a front of said photoelectric conversion part.

Regarding claim 2, Burlefinger shows in Figs. 1-3, a two-dimensional weak radiation detector, comprising: a photoelectric conversion part (304. i.e., photocathode) which emits electrons (310, i.e., photoelectrons) by incidence of photons (308); an amplification module (amplification portion of electron amplification and collection device (320)) which is placed to face the photoelectric conversion part (304. i.e., photocathode), and is provided with a number of electron amplification parts (26, i.e., secondary emission layer) that amplify the photoelectric conversion part (304. i.e., photocathode); a detection module (combination of depletion region (31) and semiconductor region (22)) which is provided to correspond to each of said electron amplification parts constituting the amplification module, and is provided with a number of electron detection parts on which electrons from the electron amplification parts (26, i.e., secondary emission layer) are incident; and a wavelength calculation part (inherently performed by the signal processing circuitry provided with image pickup unit (100), col. 6, lines 47-51) which obtains energy of said photons based on a magnitude of the output signal of each of said electron detection parts, and converts the magnitude into a color signal. Burlefinger does not disclose an operation control part which operates each of said electron detection parts constituting the detection module based on an orthogonal modulation pattern; and a light incidence position calculation part which obtains positions of said photons incident on said photoelectric conversion part, based on a control signal of the operation control part and an output signal of each of said electron detection parts. Satoh shows in Figs. 1-2 an operation control part

(combination of cpu (117) operation unit (116)) which operates each of said electron detection parts constituting the detection module based on an orthogonal modulation pattern; and a light incidence position calculation part (combination of original image data area (101a), orthogonal transform coefficient area (101b) and orthogonal transform unit (102)) which obtains positions of said photons incident on said photoelectric conversion part (304. i.e., photocathode), based on a control signal of the operation control part (combination of cpu (117) operation unit (116)) and an output signal of each of said electron detection parts (the positions of the photons are inherently obtained by the orthogonal transformation unit (103) during first time encoding sequence in step s107 in Fig. 2, col. 6, lines 59-65 and col. 7, lines 1-14). It would have been obvious to one skilled in the art to provide the image coding apparatus of Satoh to the device of Burlefinger for the purpose of improving compression of image data prior to file storage.

Regarding 3, Burlefinger further discloses that said wavelength calculation part obtains the magnitude of the output signal based on output pulse repetition frequency of the output signal of said electron detection part and converts it into said color signal (inherently performed by the signal processing circuitry provided with image pickup unit (100), col. 6, lines 47-51).

Response to Arguments

4. Applicant's arguments filed 01/23/2007 have been fully considered but they are not persuasive.

In response to applicant's arguments that neither Burlefinger nor Satoh alone or

in combination teach an operation control part which operates each of said electron detection parts constituting the detection module based on an orthogonal modulation pattern, the examiner disagrees. According to col. 6, lines 59-65 and col. 7, lines 1-14, the orthogonal transformation unit (102) performs the orthogonal modulation by generating the orthogonal transformation coefficients (corresponding to the detected signal of the image) in repeated steps until processing of the image is complete. In addition, the type of orthogonal modulation (Hadamard transformation) addressed in the applicant's remarks does not appear in any of the claims.

The examiner has cited prior art related to applicant's invention which discloses the Hadamard, orthogonal modulation addressed in the applicant's remarks.

Conclusion

5. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure.

Jovin (U.S. Patent No. 6,399,935 B1) discloses a programmable spatially light modulated microscope ND microscopy.

Kurabe (Publication No. U.S. 2002/0136269 A1) discloses an orthogonal code generating circuit.

Ito (U.S. Patent No. 6,421,040 B2) discloses a drive method, a drive circuit and a display device for liquid crystal cells.

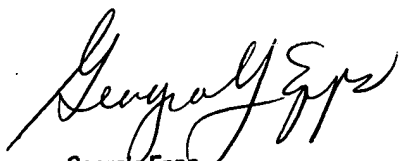
6. **THIS ACTION IS MADE FINAL.** Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the mailing date of this final action.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Kevin Wyatt whose telephone number is (571)-272-5974. The examiner can normally be reached on Monday-Friday.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Georgia Epps can be reached on (571)-272-2328. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see http://pair-direct.uspto.gov. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).



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